1. SCOPE

1.1 Purpose. The purpose of this document is to provide a baseline for planning and designing the evolving Defense Information System (DIS) defined in 1.6.

1.2 Applicability. This document is to be used in planning, designing, and developing new DIS communications systems, and in making major changes to existing systems. This document does not necessarily apply to leased commercial facilities, but such facilities should be selected to be compatible with its requirements. This document applies to digital communications systems only. Military Standard (MIL-STD)-188-100 will continue to provide the standards for analog communications systems.

1.3 Objectives. This document has five objectives:

a. To achieve interoperability between strategic and tactical digital networks for voice, data, facsimile, record traffic, and video services.

b. To provide performance standards for strategic and tactical system users.

c. To adopt specific subsets of commercial standards, where feasible, to achieve cost-effective interoperability, performance, and interfaces.

d. To provide a framework to change existing standards and prepare new standards.

e. To establish a reference source for use by all organizations involved in developing the DIS and procuring DIS-compatible hardware and software.

1.4 System standards and design objectives. When procurement, engineering, or design activities elect to incorporate this planning standard in their acquisition documents, the parameters and requirements specified in this document shall be treated as mandatory system standards if the word *shall* is used. Nonmandatory parameters, requirements, and design objectives are indicated by the word *should* (design objectives, rather than standards, are used when there is a lack of measured and verified data or no consensus on the interpretation of the data). *Will* is used to express a declaration of purpose or intent. For a definition of *system standards* and *design objectives*, see FED-STD-1037.

1.5 Standards action areas. This document addresses the

interoperability, performance, and interface standards that should be met by future Department of Defense (DoD) information systems to provide a wide variety of end-to-end digital subscriber services in a single integrated network. These services include voice telephony, data transmission, facsimile, record traffic, and video. This document addresses standardization in the following major areas:

a. Subscriber services

b. Interfaces, including protocols and voice algorithms

c. Circuit and packet switching

d. Transmission

e. Signaling

f. Information security

g. Network management and system control

h. End-to-end performance requirements

Wherever possible, the standards are based on American National Standards Institute (ANSI) standards, International Telegraph and Telephone Consultative Committee (CCITT) recommendations for the Integrated Services Digital Network (ISDN), the International Organization for Standardization (ISO) Open Systems Interconnection (OSI) reference model, and existing MIL-STD-188 series standards. This document references other existing standards (military, federal, commercial, and international). This approach avoids duplication of existing standards, ensures backward interoperability, and provides for orderly transition to forward-looking standards for new systems.

1.6 DIS framework. The standards provided in this document are based on the DIS framework (see figure 4-1) described below:

a. The DIS concept provides for an evolutionary integration of existing and future defense computer and telephone communications systems. The services and agencies adopted the DIS framework as a guide for the development of this document. The DIS framework provides efficient end-to-end integrated service for information sources, sinks, and processors. Integrated service provides for voice, message, data, graphics, and imagery information transfer across a single network interface. By definition, the DIS framework includes all components necessary to achieve interoperability between DoD users.

b. The DIS framework consists of three major sections demarcated by reference points A and B. Users may access the DIS through subscriber network elements, such as source, sink, or processor terminal equipment. These terminal equipment include telephones, facsimile machines, and other data terminal equipment (DTE). For the information source, sink, or processor elements to be interoperable, all seven layers of the ISO OSI reference model must be interoperable.

c. DTEs exchange information through information transfer utilities. Information transfer utilities are comprised of local-network elements, wide-network elements, and their respective interoperability reference points. The military services provide fixed-plant, local-network elements to support strategic users and base operations. They also provide tactical local-network elements to support garrison operations and access to wide-network elements, as well as tactical local-network elements to support deployed combat forces. DISA provides wide-network elements to interconnect geographically separated local networks. The wide network includes the Defense Communications System (DCS) and public switched telephone networks (PSTN). Since the local- and wide-network elements and interoperability reference points in the information transfer utilities represent the telecommunications portion of DIS, their functionality is limited to the lower three layers of the OSI reference model.

d. Advances in computer and telephone communications technology allow multiple services to be provided by a single network, as in ISDN. Wherever applicable, the DIS framework allows the adoption of ANSI standards for ISDN. Within the DIS framework, circuit-switched voice and data services are based on military standards for tactical systems and ISDN commercial standards for strategic systems.